Figure 1 - Three-quarter Front View of TG-1A Glider

ERECTION AND MAINTENANCE INSTRUCTIONS

TG-1A GLIDER

NOTICE: This document contains information affecting the National Defense of the United States within the meaning of the Espionage Act, 50 U. S. C., 31 and 32, as amended. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

PUBLISHED BY AUTHORITY OF THE COMMANDING GENERAL,
ARMY AIR FORCES, BY THE HEADQUARTERS,
AIR SERVICE COMMAND, PATTERSON FIELD, FAIRFIELD, OHIO

THE OTTERBEIN PRESS, DAYTON, OHIO
MAY, 1943 18,000

MAY 5, 1943

THIS PUBLICATION MAY BE USED BY PERSONNEL RENDERING SERVICE TO THE UNITED STATES OR ITS ALLIES

Paragraph 5.*d.* of Army Regulation 380-5 relative to the handling of "restricted" printed matter is quoted below.

> "*d.* Dissemination of restricted matter.—The information contained in restricted documents and the essential characteristics of restricted material may be given to *any person known to be in the service of the United States and to persons of undoubted loyalty and discretion who are cooperating in Government work*, but will not be communicated to the public or to the press except by authorized military public relations agencies."

This permits the issue of "restricted" publications to civilian contract and other accredited schools engaged in training personnel for Government work, to civilian concerns contracting for overhaul and repair of aircraft or aircraft accessories, and to similar commercial organizations.

ADDITIONAL COPIES

Additional copies of this Technical Order may be secured on Requisition, AAF Form 102, as prescribed in AAF Regulation 15-102. Submit requisitions to: Commanding General, Air Service Command, Patterson Field, Fairfield, Ohio. Also, see T. O. No. 00-25-3 for details on distribution of Technical Orders.

TABLE OF CONTENTS

Section		Page
I	Description and Dimensions	1
	1. Description	1
	2. Leading Dimensions	1
II	Shipment and Erection Procedure	3
	1. Shipment	3
	2. Erection Procedure	3
III	Handling and General Maintenance	4
	1. Handling	4
	2. Hoisting	4
	3. Leveling	4
	4. Mooring	4
	5. Towing	5
	6. Preflight Inspection	5
	7. Periodic Inspection	5
	8. Lubrication	6
IV	Major Component Parts and Installations	8
	1. Wing	8
	2. Spoilers	8
	3. Aileron	8
	4. Empennage	8
	5. Fuselage	14
	6. Control System	14
	7. Communicating Equipment	14
V	Finish Specifications	17
	1. Wood Surfaces	17
	2. Metal Surfaces	17
	3. Fabric Surfaces	18
	Alphabetical Index	19
Appendix		
I	U.S.A. - British Glossary of Nomenclature	21

SECTION I

DESCRIPTION AND DIMENSIONS

1. DESCRIPTION. (See figure 1.)

This Technical Order is a Handbook of Erection and Maintenance Instructions for the TG-1A Glider, manufactured by Frankfort Sailplane Company, Joliet, Illinois, under Contract W535 ac-28131. The TG-1A, a two-place, high-wing, strut-braced, high performance Sailplane, is used primarily for training purposes.

2. LEADING DIMENSIONS. (See figure 2.)

a. GLIDER, GENERAL.

Over-all span	46 ft, 1-1/2 in.
Over-all length	23 ft, 2-1/4 in.
Over-all height (level)	8 ft, 3 in.

b. WING.

Airfoil - Gottingen 549 - root to tip	
Area (both wings)	194.3 sq ft
Root chord	60 in.
Tip chord (theoretical)	27.38 in.
Incidence - root	4 deg 15 min
Incidence - (theoretical tip)	2 deg 15 min
Dihedral	1 deg 40 min
Sweep-back	0 deg
Maximum rib spacing	15 in.
Spar location 30% of chord from leading edge	

c. AILERON.

Area (both ailerons)	24.83 sq ft
Span	12 ft, 7-3/4 in.
Chord - maximum	16.844 in.
Up travel	22 deg
Down travel	16 deg

d. SPOILER.

Area (both spoilers)	1.69 sq ft
Span	30.5 in.
Chord	4 in.
Travel	90 deg

e. HORIZONTAL STABILIZER.

Area	9.65 sq ft
Span	8 ft
Chord - maximum	20.75 in.

f. ELEVATOR.

Area	9.12 sq ft
Span	9 ft, 6-1/2 in.
Chord - maximum	16.75 in.
Up travel	25 deg
Down travel	20 deg

g. VERTICAL STABILIZER.

Area	4.01 sq ft
Height	3 ft, 1-1/4 in.
Chord - maximum	21.5 in.

h. RUDDER.

Area	8.07 sq ft
Height	5 ft, 7-7/8 in.
Chord - maximum	20.75 in.
Right travel	32 deg
Left travel	32 deg

i. LANDING GEAR.

Tread	0 in.
Wheel - Saginaw Industrial Wheel	No. C1569
Tire Jumbo Jr.	14 in. (6-ply smooth tread)
Tube Jumbo Jr.	14 in.
Tire pressure	30 lb/sq in.

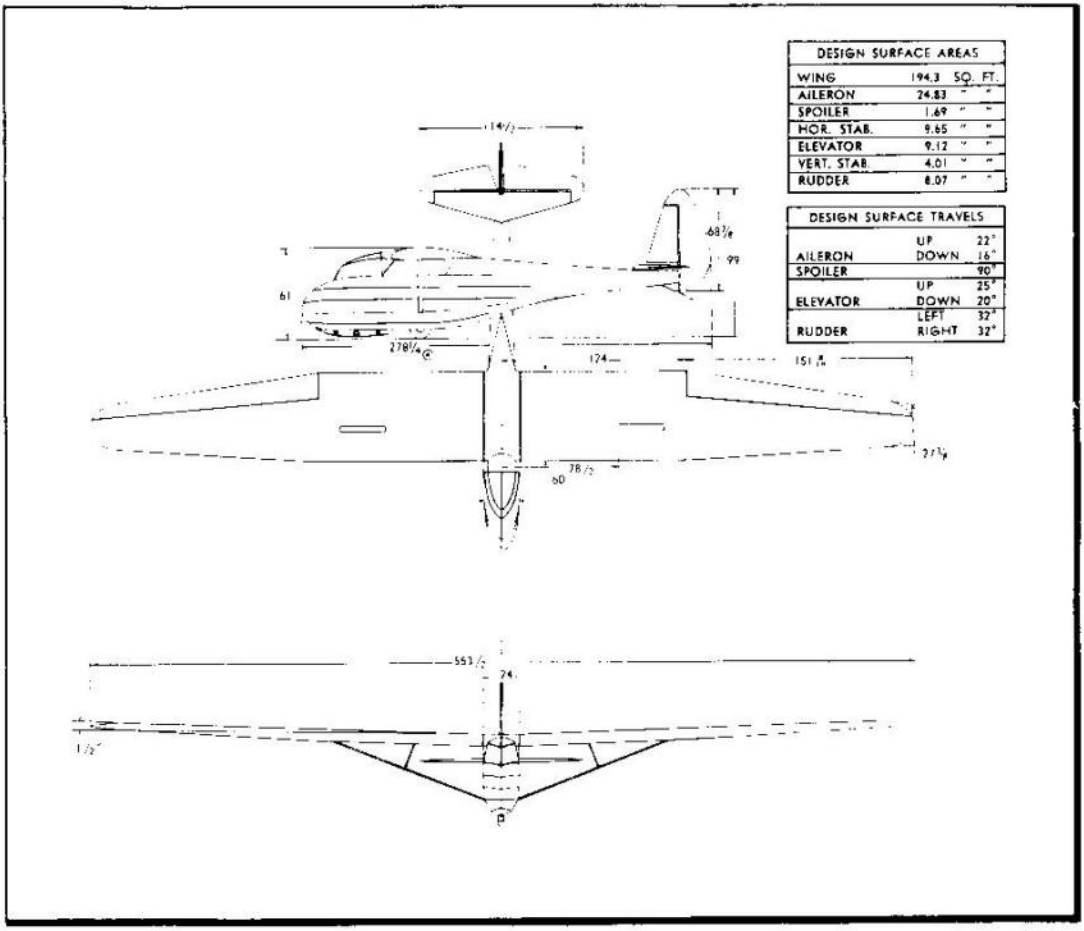


Figure 2 - Three-View Drawing of TG-1A Glider

SECTION II

SHIPMENT AND ERECTION PROCEDURE

1. SHIPMENT.

a. Whenever practicable, the complete glider should be shipped in disassembled form, on a specially constructed trailer. This trailer should incorporate sufficient accommodations for securely fastening all major component parts of the glider in as compact a form as possible. (See figure 3.)

b. In special cases, such as shipment of replacement parts, crates may be used. These crates should be of sturdy construction, and should be well padded to prevent any damage to the contents.

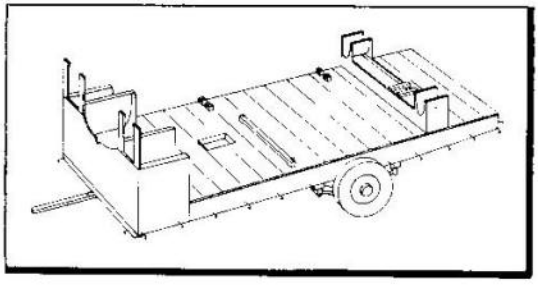


Figure 3 - Trailer for TG-1A Glider

2. ERECTION PROCEDURE.

a. Before dismounting glider from trailer, be sure that trailer is headed into the wind. This will prevent the wind from striking the broad surfaces of the wings, which will make them unmanageable.

b. Remove wing panels from trailer, being careful to keep them in flight position, lying on the ground parallel to wind direction. Always choose a place as clear as possible of rocks or debris to prevent damage to fabric. If there is very much vegetation, it is well to slide the wing forward slightly upon contact to prevent puncturing the fabric.

c. Be careful to place the horizontal tail in an obvious place so that it will not be stepped on.

d. Remove fuselage from trailer by lifting free from all supports and fastening devices. See that rudder does not strike any part of the trailer structure.

e. Place struts in their respective position in front of the wings.

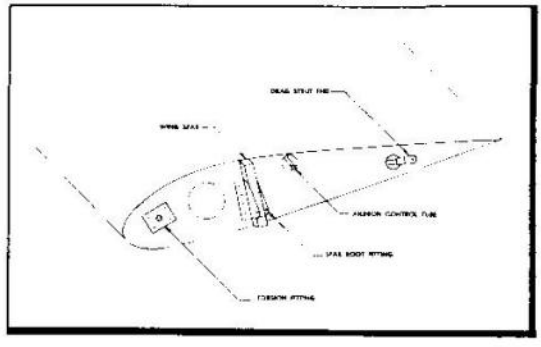


Figure 4 - Wing Butt Fittings

f. Be sure that all parts, bolts, pins, and tools are properly placed in order so that a search will not have to be made after assembly has started. Unnecessary delay can be avoided by instructing each member of the crew as to his duties and how to do them.

g. GLIDER ASSEMBLY. - A three-man crew is about the minimum number required to conveniently handle the glider. Either wing panel may go on first. One man on the wing tip and two at the root (one lifting the leading edge and one on the trailing edge) lift the wing into position, at the same time keeping the fuselage balanced. Enter the plug (or torsion fitting) on the leading edge about 1/2 inch. (See figures 4 and 5.)

The wing-tip man then moves toward the tail until the drag strut fitting lines up. Insert the threaded pin, being careful not to damage the threads. Screw it about one-half way in, then the wing-tip man moves

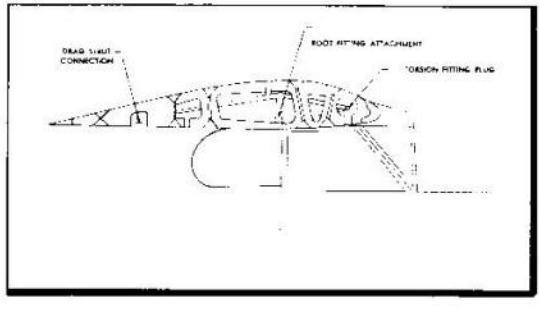


Figure 5 - Fuselage Wing Connection

forward until the main spar fitting lines up. The taper pin will help line this up, so it can be tapped into place. Always hold the wing in its approximate position in relation to the fuselage to prevent straining the fittings or crushing the fairing.

Next, pin the lift strut into place, starting with the wing end, and then the fuselage end. Next, pin the jury strut, which is about the middle of the lift strut. All bolts should be entered from the front of the glider (bolts facing forward). Next, support the wing at the tip by placing some type of support under it, and proceed to assemble the other panel in the same manner as the glider is supported in a horizontal position.

Hook up the aileron system by inserting two pins inside the cabin. The drag strut fitting can be tightened to a snug fit on both sides. Be careful not to tighten too much, as the threads may be stripped.

The spoiler system is hooked up automatically when the wings are in position. Be sure that the fuselage and wing system is in a closed position on assembly. This permits the fittings to properly engage.

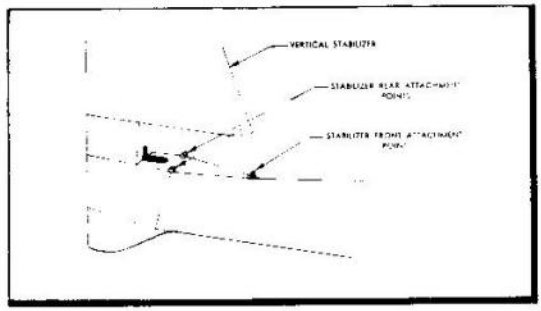


Figure 6 - Horizontal
Stabilizer Attachment Points on Fuselage

The horizontal tail is attached with three bolts and one control horn. Carefully slide surface under the fin and line up for bolts. (See figure 6.)

Go over the entire glider and check each assembly pin and bolt to see that it has been properly safetied, and where necessary, tighten. Try all controls to be sure they are working properly before flight.

SECTION III

HANDLING AND GENERAL MAINTENANCE

1. HANDLING.

The glider may be moved by lifting the wing tip and the tail off the ground and rolling the plane on the landing wheel, tail first. Push on the leading edge of the wing near the fuselage. Lift the tail by the lower longerons of the fuselage, just forward of the horizontal stabilizer. This will prevent any damage resulting from rough handling of the stabilizer.

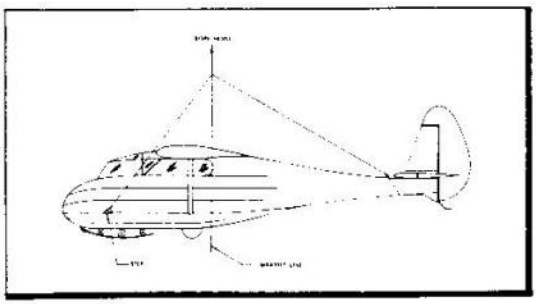


Figure 7 - Hoisting Diagram

2. HOISTING.

No definite provisions for hoisting have been made, although in an emergency this can be accomplished in the following manner: Attach cables or ropes to the steps on both sides of the forward portion of the fuselage, and around the rearward position of the fuselage, just ahead of the horizontal stabilizer. (See figure 7.)

3. LEVELING.

a. To level the glider transversely, prop up the wing tips and test for horizontal by laying the leveling instrument across the two lower longerons in the rear cockpit at the two lug locations marked "L-L."

b. To level the glider longitudinally, it is necessary to prop up the tail by placing a support under the tail skid. Place the leveling instrument longitudinally in the rear cockpit across the fuselage member that holds the front of the rear seat, and the lug that is welded to the member holding the back of the front seat.

4. MOORING.

a. To moor the glider, fasten ropes around the main struts at the spar fitting and attach the other

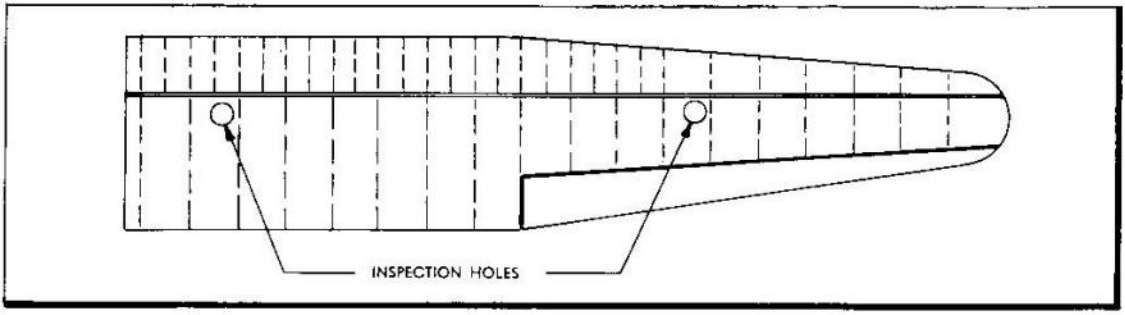


Figure 8 - Wing Inspection Holes

end to a tie-down or to stakes driven into the ground. To tie down the tail, fasten a rope around the fuselage just forward of the horizontal stabilizer and fasten to the ground.

b. Proper handling in winds is of utmost importance to insure the safety of the glider. Two men can safely handle the glider in still air or light breezes, but in gusty winds, or winds of 20 mph or more, four men, or more, are needed, unless the glider is securely moored. The glider should be quartered into the wind, with one wing down. A pad placed under the wing tip and a sand bag, weighing approximately 30 pounds, placed on top, will prevent any damage by scraping or pounding the ground if there is any slack in the rope.

5. TOWING.

On the ground, towing with a car or truck is done by hooking a short cable and ring to the release hook, the wing being held level by a man stationed at the tip. It is important that the tow ring used has an inside diameter of approximately 2 inches. If a smaller ring is used, there may be danger of jamming on the release hook.

6. PREFLIGHT INSPECTION.

Before each flight, check the following:

a. Wing-to-fuselage attachment points. See that all bolts and pins are properly safetied.

b. Bolts and pins at lift and jury strut attachment points, to see that they are properly safetied.

c. All control turnbuckles, to see that they are properly safetied.

d. All control connecting tubes, to see that they are properly connected and have no interference. (See figures 8 and 9.)

e. Release hook mechanism, to see that it is working properly.

f. All pulleys, to see that they are properly fastened and that they turn freely.

g. Brake, to see that it holds properly when applied and does not grab when not applied.

h. Spoilers, to see that they open properly and close tight to the wing surface.

7. PERIODIC INSPECTION.

Every 100 hours, or 3 months.

a. Take apart all hinges, and clean thoroughly; grease and put back together.

b. Remove control pulleys and examine cables, where they have been in contact with pulleys, for signs of fraying.

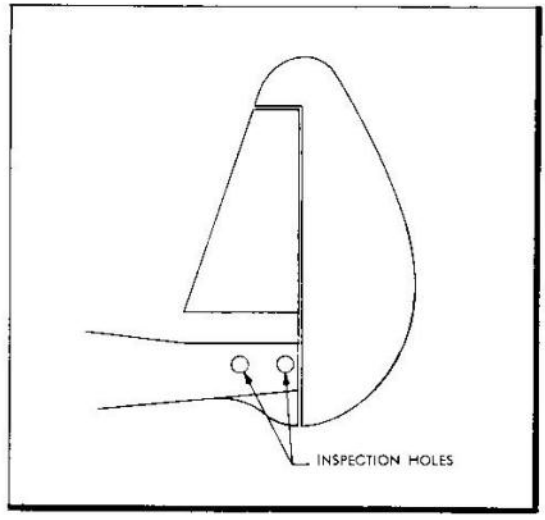


Figure 9 - Fuselage Inspection Holes

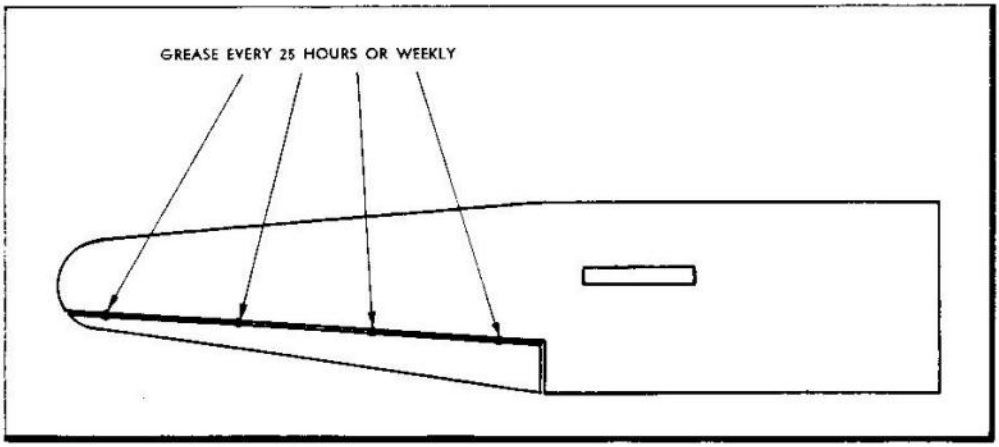


Figure 10 - Aileron Hinge Lubrication Diagram

c. Examine fuselage members to see whether any are bent or are damaged in any way.

d. See if the primer coat has been scraped off any fuselage member, leaving bare metal.

8. LUBRICATION.

a. Grease with light grade gun grease, Specification No. AN-G-3, every 25 hours, or weekly.

(1) Aileron hinges. (See figure 10.)

(2) Elevator hinges. (See figure 11.)

(3) Rudder hinges. (See figure 11.)

b. Grease landing wheel axle with wheel bearing grease, Specification No. AN-G-3, every 10 hours, unless during the 10-hour period only two or three take-offs and landings have been made. If four or more flights have been made, however, lubricate regularly at the 10-hour period.

c. Grease with light grade gun grease, Specification No. AN-G-3, every 100 hours, or 3 months.

(1) Control column. (See figure 12.)

(2) Rudder pedals.

(3) Aileron and spoiler controls, which are located in rear cockpit above pilot's head.

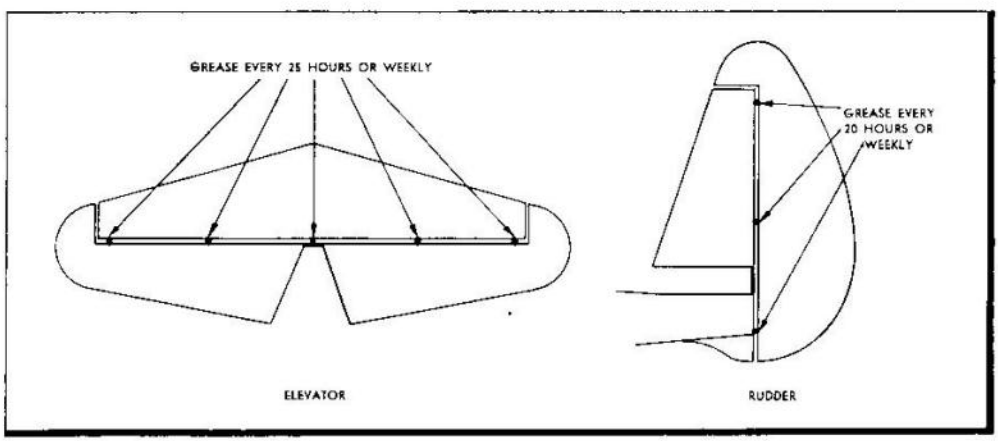


Figure 11 - Elevator and Rudder Lubrication Diagram

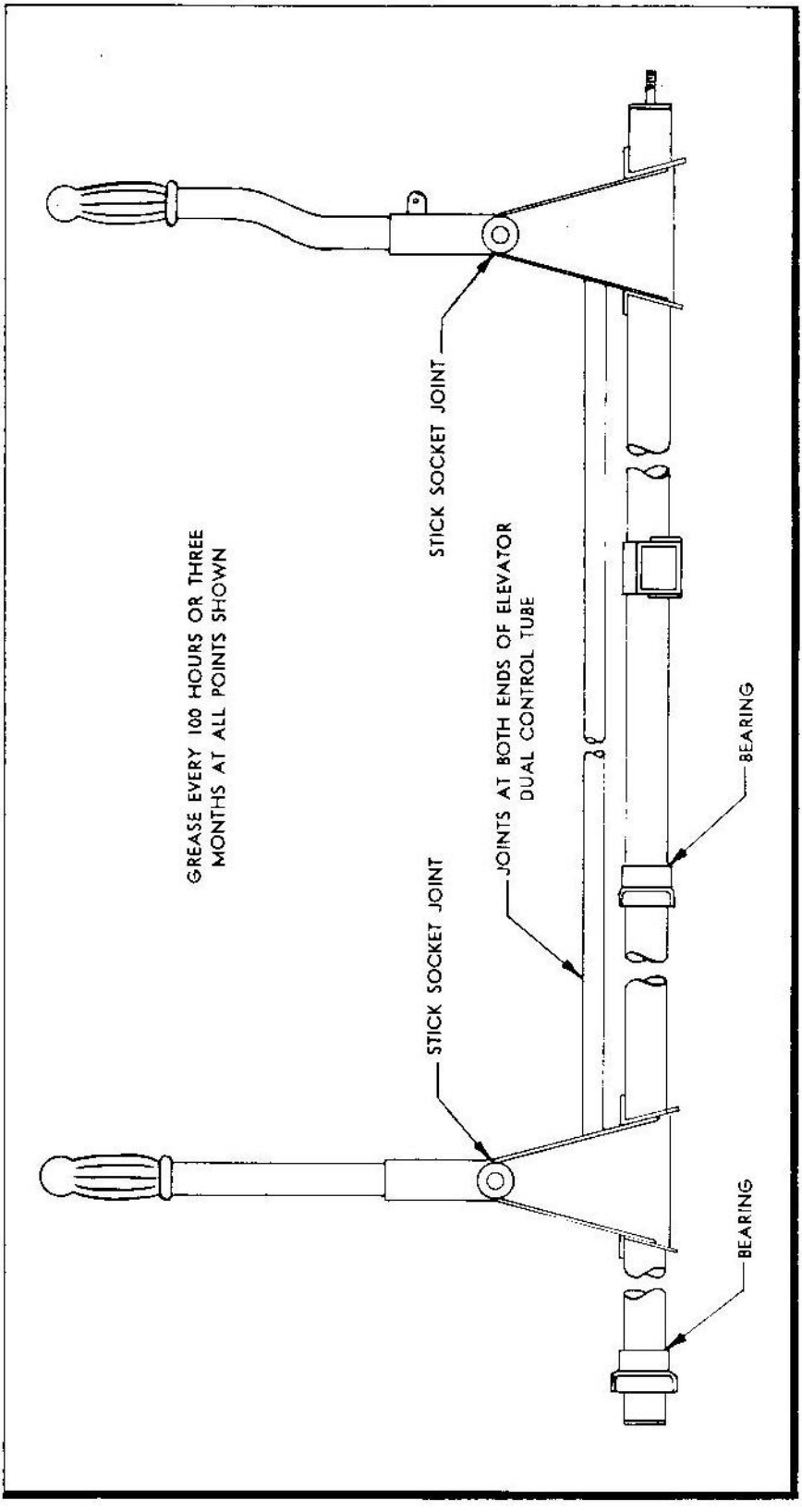


Figure 12 - Control Column Lubrication Diagram

SECTION IV

MAJOR COMPONENT PARTS AND INSTALLATIONS

1. WING.

The wing panels are made up of a box spar with a plywood-covered nose section and a fabric-covered trailing section, the single lift strut with jury making the structure semicantilever. The trailing ribs are dependent upon the "D" nose section and the false spar for structural rigidity. At the top and bottom of the nose and trailing ribs are shear blocks, and in the case of the trailing ribs, a gusset secures it to the spar. The "D" nose section is made up of a box spar with 16 standard ribs and 12 taper ribs. The trailing section is made up of nine standard ribs and nine taper ribs. (See figure 13.) They are glued and nailed to the spar, and then secured with plywood gussets. The false spar is solid spruce and has four aileron hinges attached to it. The trailing edge is spruce and is attached with internal-type gussets.

2. SPOILERS.

The spoilers are located on the top surface of each wing. They are of solid plywood flap type, with spruce reinforcing strips.

3. AILERON.

The aileron torque tube is made from X4130 normalized chrome-molybdenum tubing. Welded to it are hinge brackets and rib tabs. The ribs are bolted to the tabs and the leading edge and trailing edge are glued to the ribs. The latter is attached by plywood gussets. The nose section is covered with plywood and the trailing section is fabric covered.

4. EMPENNAGE. (See figure 14.)

a. HORIZONTAL STABILIZER. - The horizontal stabilizer is made up of a laminated solid spar with 10 taper ribs and 1 main center rib. The leading-edge strip is of spruce, and the complete assembly is covered with plywood skin.

b. VERTICAL STABILIZER. - The vertical stabilizer is very similar in construction to the horizontal stabilizer. It is made up of a solid cantilever spar with four taper ribs. At the base is located one short drag spar. This structure is held together by a spruce leading-edge strip and plywood skin.

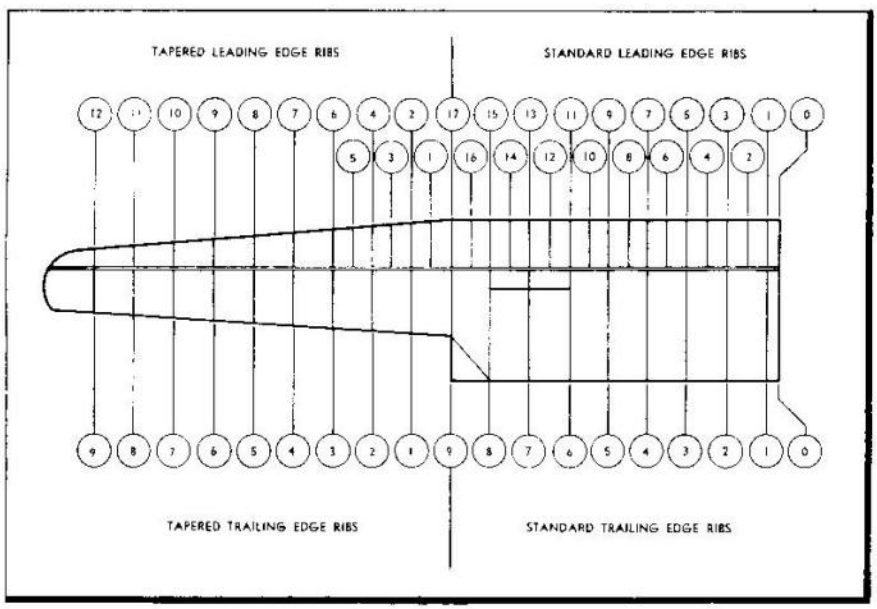


Figure 13 - Wing Stations Diagram

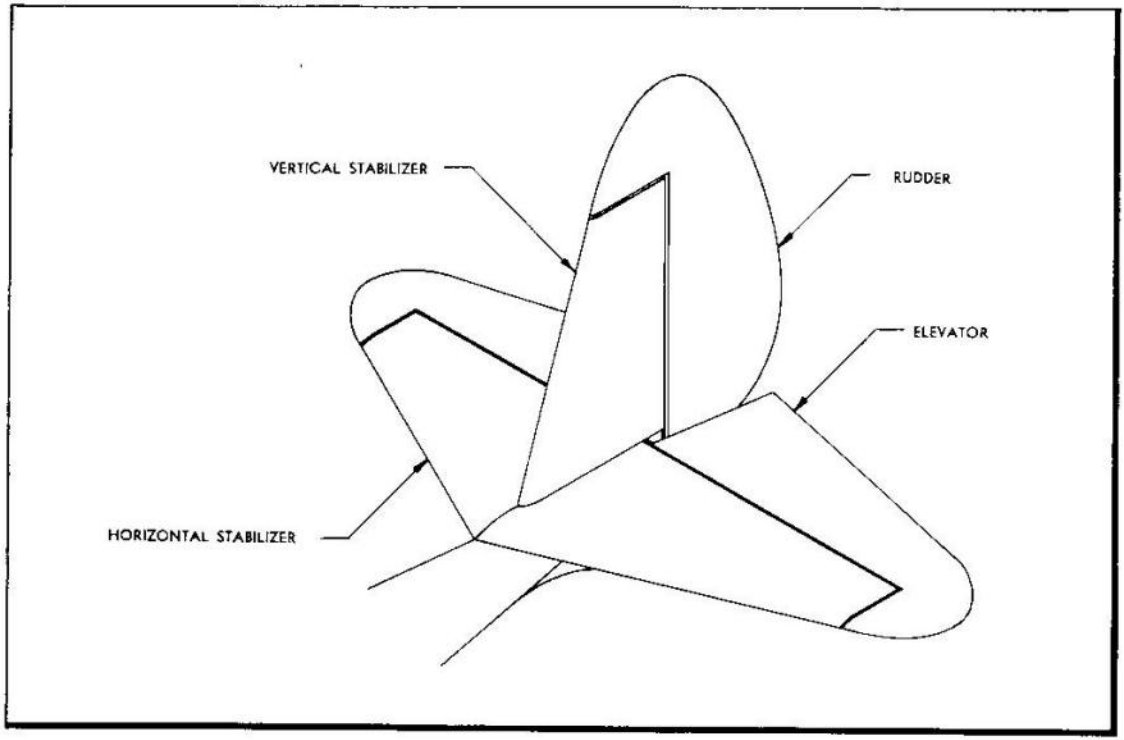


Figure 14 - Empennage

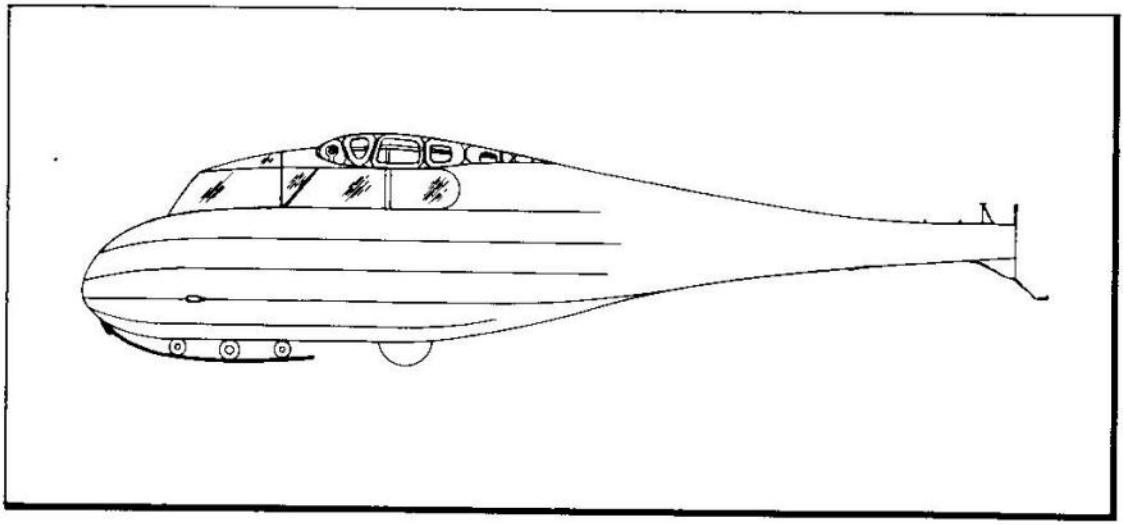


Figure 15 - Fuselage

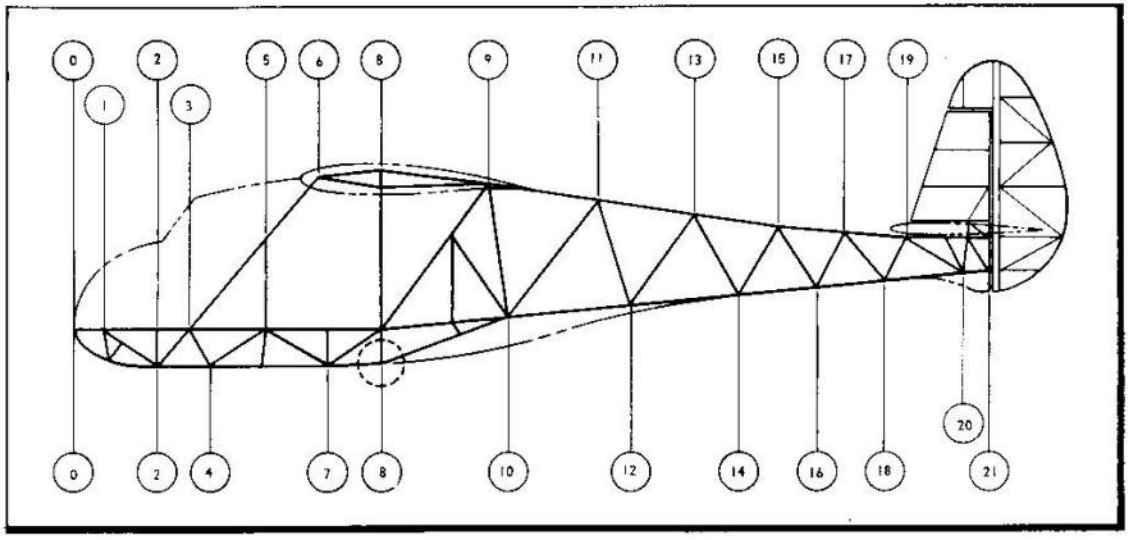


Figure 16 - Fuselage Stations Diagram

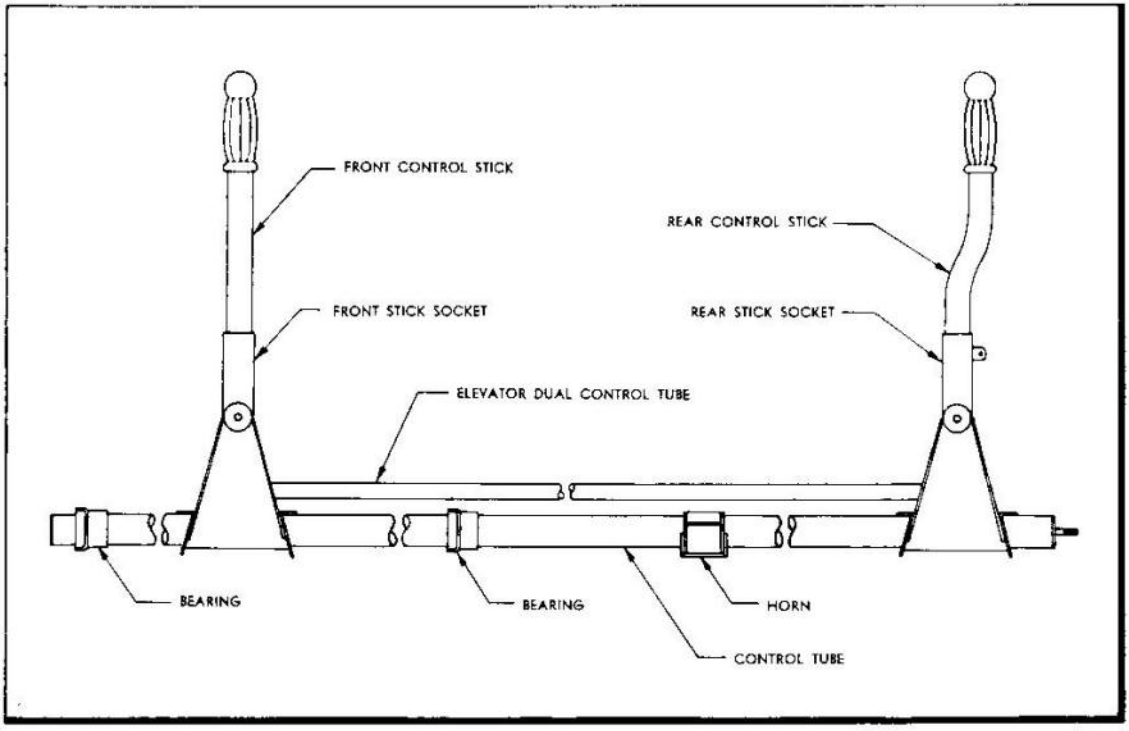


Figure 17 - Control Column

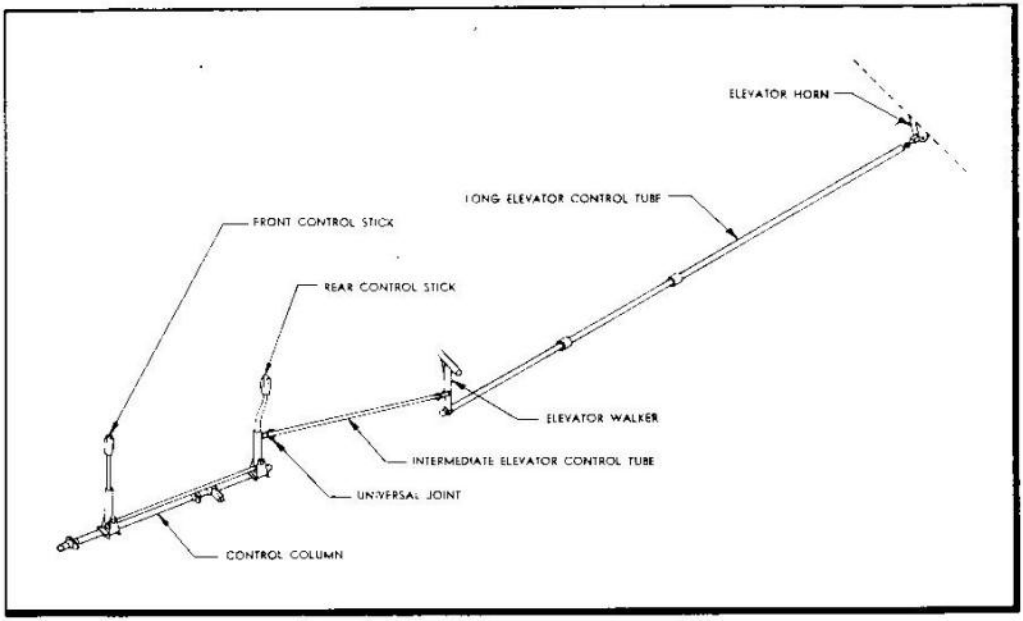


Figure 18 - Elevator Controls Diagram

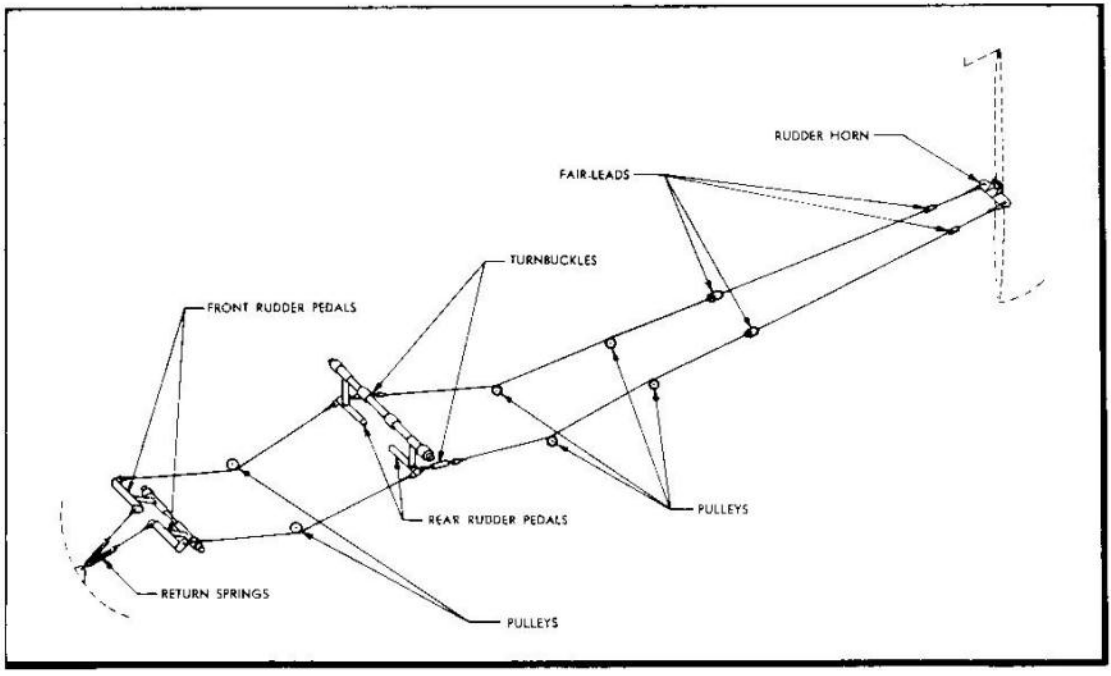


Figure 19 - Rudder Controls Diagram

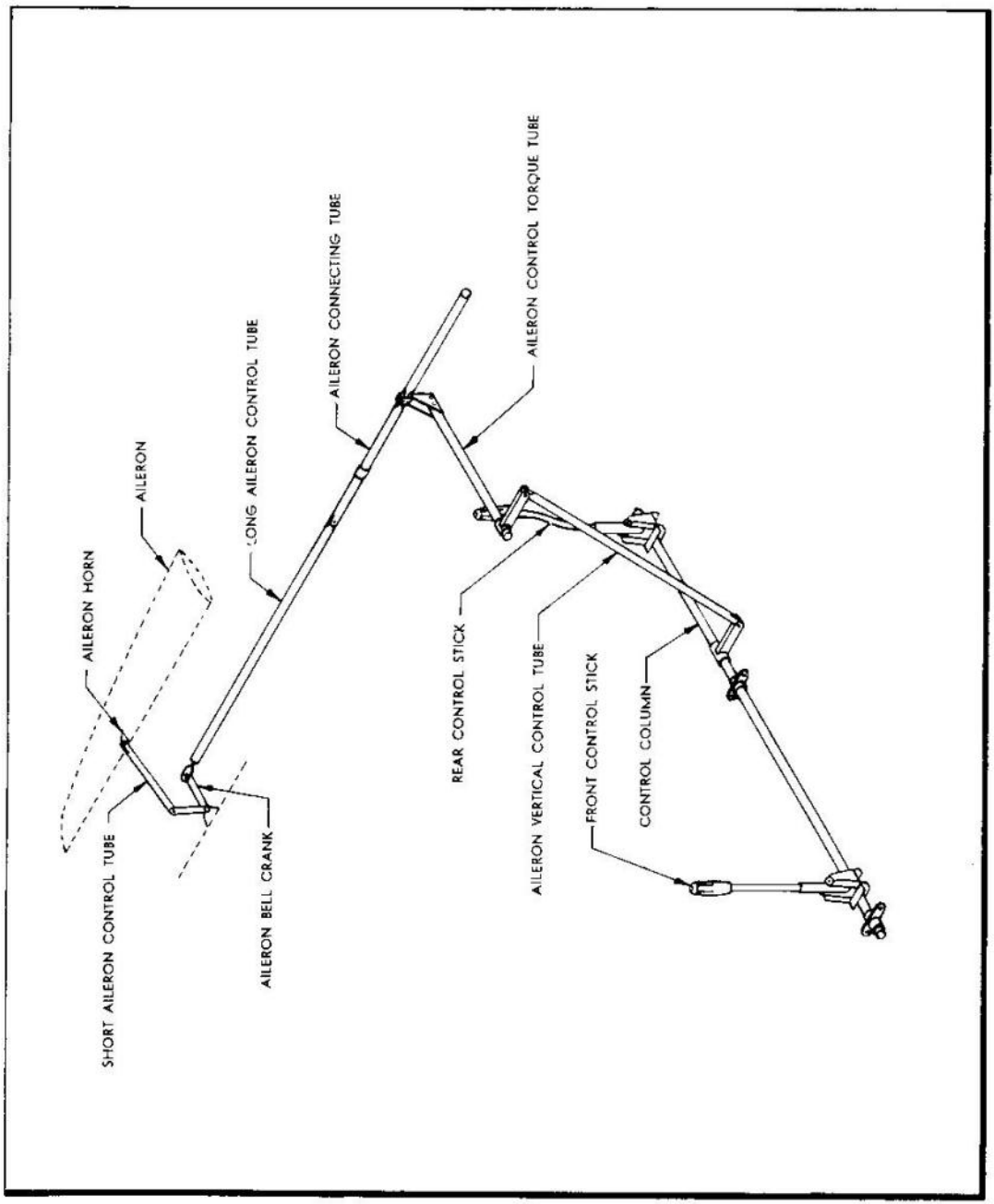


Figure 20 - Aileron Controls Diagram

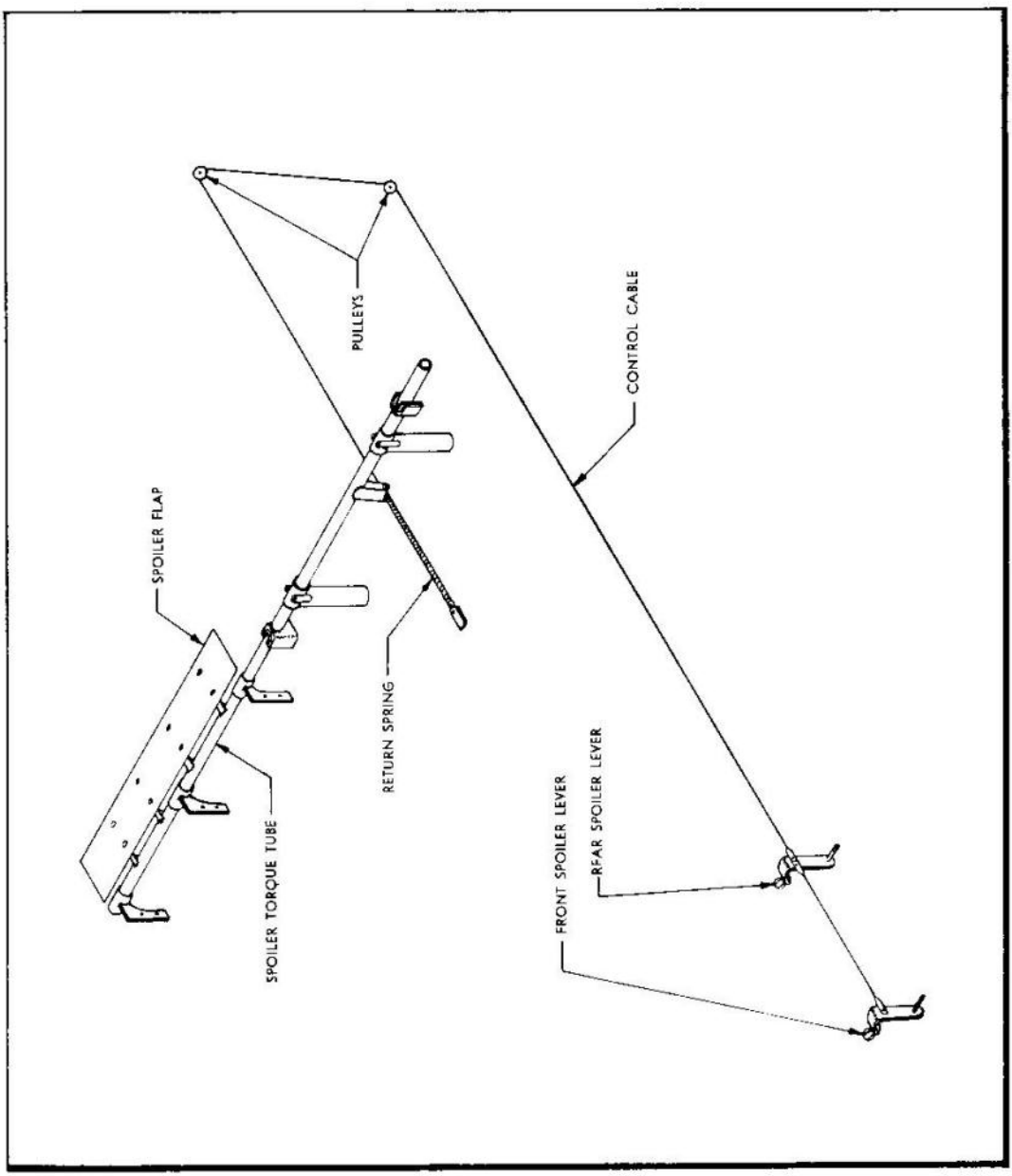


Figure 21 - Spoiler Controls Diagram

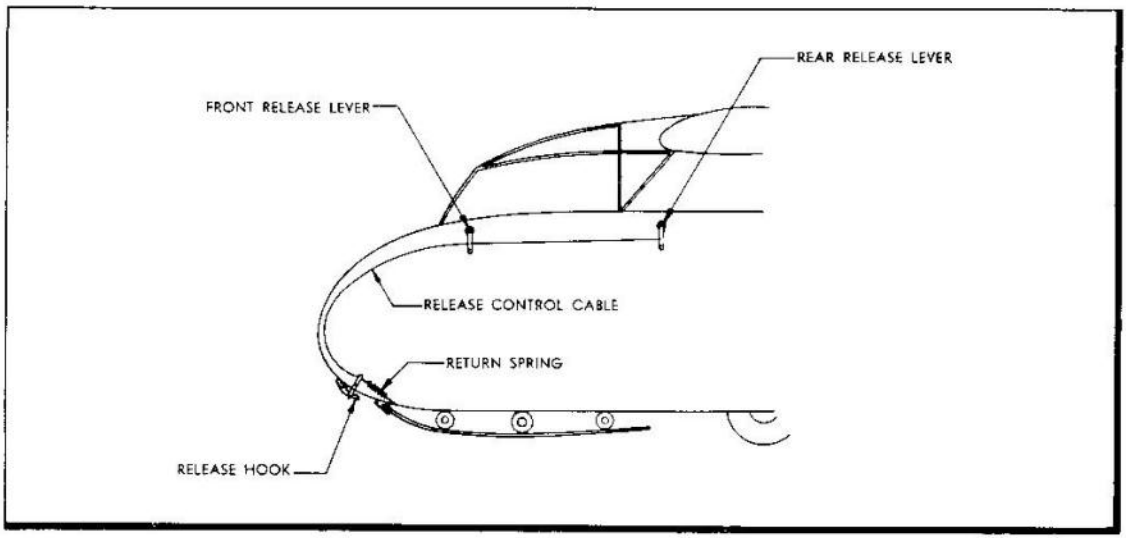


Figure 22 - Release Controls Diagram

c. ELEVATOR. - The elevator is made up of a solid laminated spruce spar. There are 12 vertical ribs and 12 diagonal ribs. The trailing edge and tip are laminated sitka spruce. In the balance section is installed a lead balance weight. The tips and center section are plywood skin covered. The remainder of the assembly is fabric covered. The elevator is hinged at five points.

d. RUDDER. - The spar of the rudder is of the box type and the rest of the assembly is made up of solid and built-up ribs. The trailing edge is of laminated spruce. There are five ribs perpendicular to the spar, including the balance section and five diagonal ribs. A lead balance weight is located in the front section. The entire tip and bottom are plywood covered, and the remaining portion fabric covered. The rudder is hinged at three points.

5. FUSELAGE. (See figure 15.)

The fuselage is a welded tube structure, faired, and fabric covered. The primary structure of the entire fuselage is X4130 normalized chrome-molybdenum tubing. (See figure 16.) Fairing is composed mostly of SAE 1010 tubing. The two enclosed cockpits, of tandem arrangement have complete dual controls and instruments. Seats are of heavy canvas and provide ample room for either seat or back-type parachutes.

6. CONTROL SYSTEM.

a. Horizontal control surfaces are actuated by means of a torque tube connecting dual controls in the cockpits. (See figure 17.)

b. When the stick is moved forward or backward, the elevator is moved by a long push-pull tube. (See figure 18.)

c. The rudder is controlled by foot pedals which are connected to the rudder horn by cables. (See figure 19.)

d. Ailerons are controlled by moving the stick from side to side by control tubes and a bell crank located in the wing. (See figure 20.)

e. The spoilers are operated by cables connected to a spoiler torque tube and a spoiler return spring. (See figure 21.)

f. The release is an automatic cable-type release which disengages when the release levers, located on the left side of each cockpit, are pulled toward the rear. (See figures 22 and 23.)

g. The brake is cable controlled, and is operated by pulling rearward on the brake levers on the lower left side of each cockpit. (See figure 24.)

7. COMMUNICATING EQUIPMENT.

A portable transceiver radio set, model SCR-585A, is mounted in the nose of the ship.

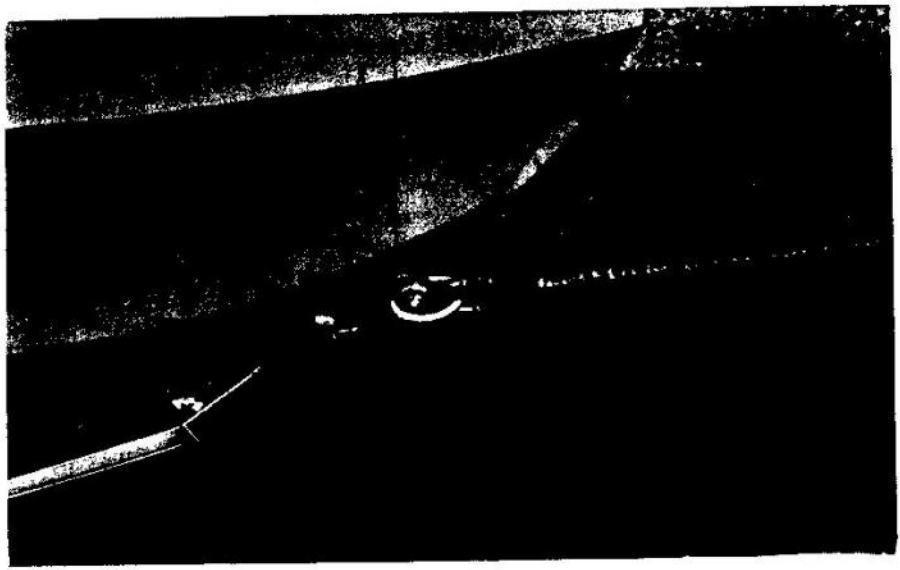


Figure 23 - Release Hook

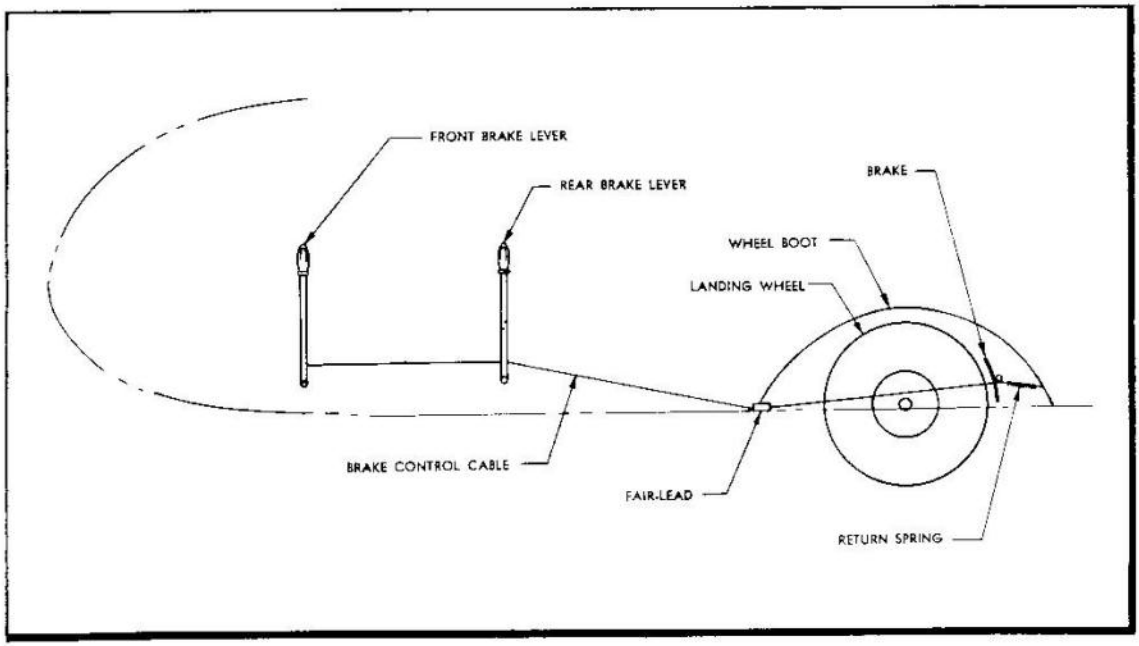
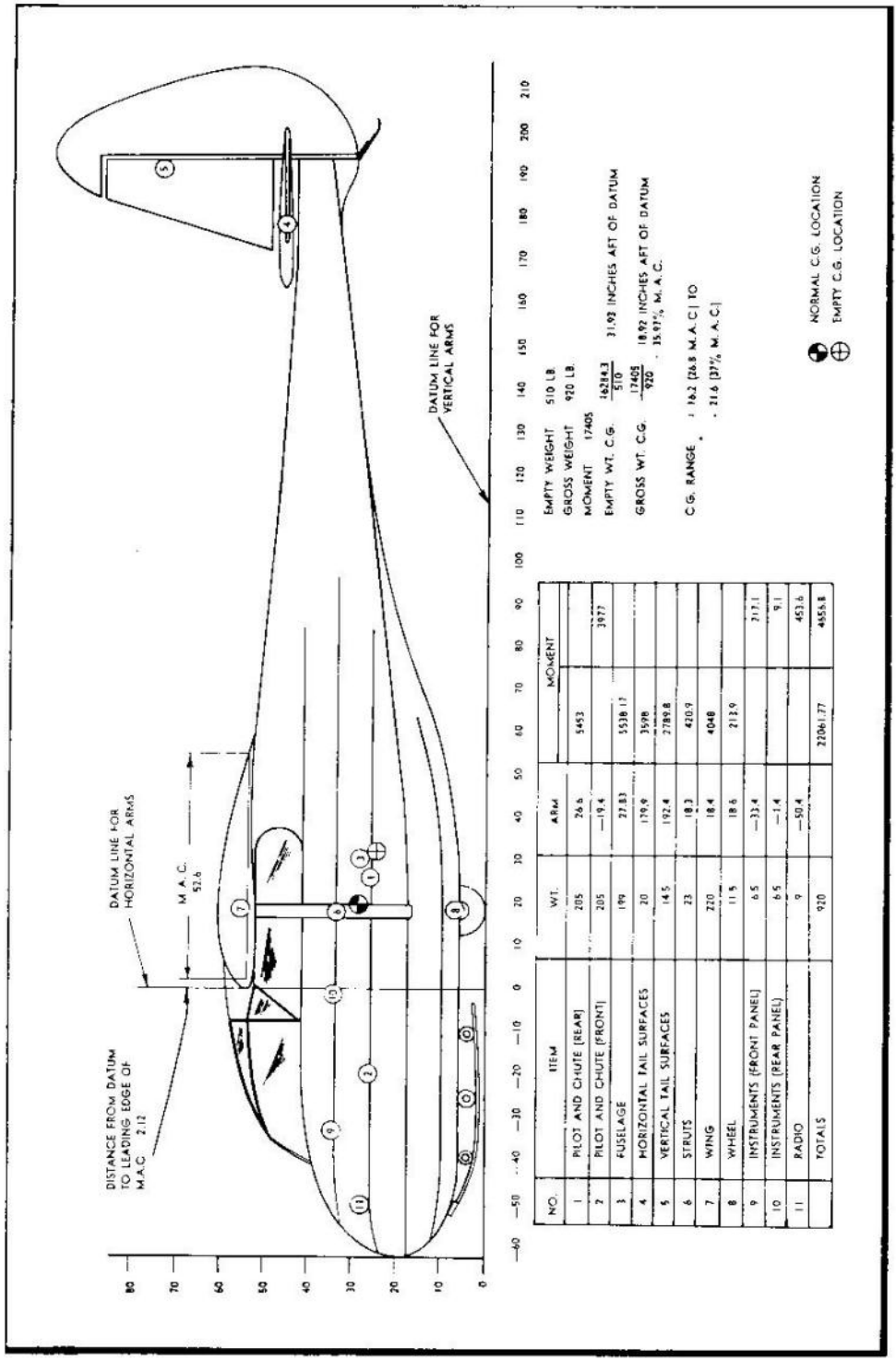


Figure 24 - Brake Controls Diagram



NO.	ITEM	WT.	ARM	MOMENT	
1	PILOT AND CHUTE (REAR)	205	26.6	5453	
2	PILOT AND CHUTE (FRONT)	205	—19.4		3977
3	FUSELAGE	199	27.83	5538.17	
4	HORIZONTAL TAIL SURFACES	20	179.9	3598	
5	VERTICAL TAIL SURFACES	145	192.4	27898	
6	STRUTS	23	18.3	420.9	
7	WING	220	18.4	4048	
8	WHEEL	11.5	18.6	213.9	
9	INSTRUMENTS (FRONT PANEL)	6.5	—33.4		217.1
10	INSTRUMENTS (REAR PANEL)	6.5	—1.4		9.1
11	RADIO	9	—50.4		453.6
	TOTALS	920		22061.77	4656.8

Figure 25 - Weight and Balance Diagram

SECTION V

FINISH SPECIFICATIONS

1. WOOD SURFACES.

a. PREPARATION FOR FINISH.

(1) INTERIOR SURFACES.

(a) Surfaces which are inaccessible after assembly such as interiors of "D" nose wing sections, horizontal and vertical tail surfaces, etc.: Sand lightly if necessary, with a fine grit sandpaper, before skinning or covering.

(b) FURNISHINGS. - Sand all furnishings and wipe free of dust.

(2) EXTERIOR OR EXPOSED SURFACES.

(a) All exterior plywood surfaces such as skin on "D" nose, center section, tail surfaces, etc.: Sand first and give one coat of high quality pastewood filler.

(b) The nose skid is the only exterior wood surface other than plywood and, consequently, requires only sanding.

b. PRIMARY COAT.

(1) INTERIOR SURFACES. - There is no intermediate coat between preparation for finish and finish coat on any of the interior wood surfaces.

(2) EXTERIOR OR EXPOSED SURFACES.

(a) All exterior plywood surfaces such as skin on "D" nose, center section, tail surfaces, etc.: Give each three coats of clear dope conforming to Specification No. AN-TT-D-514, and one coat of aluminum dope, made by mixing clear dope conforming to Specification No. AN-TT-D-551, and aluminum powder, conforming to Federal Specification No. TT-A-468.

(b) Give the nose skid at least one coat of the above aluminum dope.

c. FINISH COAT.

(1) INTERIOR SURFACES.

(a) Surfaces which are inaccessible after assembly such as interiors of "D" nose wing sections, horizontal and vertical tail surfaces, etc.: Give one coat of spar varnish, conforming to Specification No. AN-TT-V-118, thinned with naphtha. This varnish is applied by pouring or forcing it through lightning holes, and after all surfaces on the inside are well covered, all excess varnish should be thoroughly drained out. All ribs and members on the inside of fabric-covered surfaces are given one or two coats of this same varnish before covering with fabric.

(b) FURNISHINGS. - Finish all furnishings with at least one coat of pigmented dope conforming to Specification No. AN-TT-D-554. The color of this dope will depend either on the type of furnishing or its location in the glider, in relation to the color scheme used.

(2) EXTERIOR OR EXPOSED SURFACES.

(a) All exterior or exposed plywood surfaces such as skin on "D" nose, center section, tail surfaces, etc.: Finish with at least one coat of pigmented dope conforming to Specification No. AN-TT-D-554. The color of this dope will depend upon the location of the surface to be finished, in relation to the color scheme used.

(b) The nose skid, which is the only exterior wood surface other than plywood, is given at least one coat of pigmented dope conforming to Specification No. AN-TT-D-554, the color depending on the color scheme.

(3) SURFACES IN CONTACT WITH METAL. - In all cases where a wood surface comes in contact with a metal surface, as in the case of fittings bolted to a spar, the wood surface is given one coat of spar varnish, conforming to Specification No. AN-TT-V-118, at the point where the two surfaces come in contact. This varnish is applied only to as much of the wood surface as will be covered by the metal.

2. METAL SURFACES.

a. PREPARATION FOR FINISH. - Clean thoroughly all metal surfaces, including insides of tubes, with metal prep.

b. PRIMARY COAT.

(1) INTERIOR SURFACES.

(a) Give all surfaces which are inaccessible after assembly one coat of zinc-chromate primer, conforming to Specification No. AN-TT-P-656a.

(b) EXPOSED SURFACES.

1. Give all exposed metal surfaces one coat of zinc-chromate primer, conforming to Specification No. AN-TT-P-656a.

2. Give all exposed metal surfaces that are in the cockpit, and are located so that they are below the lower edge of the windows, one coat of zinc-chromate primer, conforming to Specification No. AN-TT-P-656a, and one coat of aluminum dope. This dope is made by mixing clear dope conforming to Specification No. AN-TT-D-551, and aluminum powder, conforming to Federal Specification No. TT-A-468.

(2) EXTERIOR SURFACES. - Give all metal surfaces that are located on the outside of the glider, one coat of zinc-chromate primer, conforming to Specification No. AN-TT-P-656a, and one coat of aluminum dope. This dope is made by mixing clear dope conforming to Specification No. AN-TT-D-551, and aluminum powder, conforming to Federal Specification No. TT-A-468.

c. FINISH COAT.

(1) INTERIOR SURFACES.

(a) Finish all metal surfaces that are inaccessible after assembly with one coat of aluminum dope, made by mixing clear dope, conforming to Specification No. AN-TT-D-551, and aluminum powder, conforming to Federal Specification No. TT-A-468.

(b) EXPOSED SURFACES.

1. Finish all exposed metal surfaces with one coat of aluminum dope, made by mixing clear dope, conforming to Specification No. AN-TT-D-551, and aluminum powder, conforming to Federal Specification No. TT-A-468.

2. Finish all exposed surfaces that are located in the cockpit, below the lower edge of the window, with one coat of pigmented dope, conforming to Specification No. AN-TT-D-554. The color of this pigmented dope will depend upon the color scheme used.

3. FABRIC SURFACES.

a. PREPARATION FOR FINISH. - Wet all fabric surfaces with water to remove all wrinkles.

b. PRIMARY COAT.

(1) EXTERIOR SURFACES. - Give all fabric surfaces on the outside of the glider three coats of clear dope, conforming to Specification No. AN-TT-D-514, and one coat of aluminum dope. This dope is made by mixing clear dope conforming to Specification No. AN-TT-D-551, and aluminum powder, conforming to Federal Specification No. TT-A-468.

(2) INTERIOR SURFACES.

(a) INSIDE OF COCKPIT.

1. ABOVE LOWER EDGE OF WINDOW. - Give all fabric surfaces above the lower edge of the window, in the cockpit, one coat of clear dope, conforming to Specification No. AN-TT-D-514.

2. BELOW LOWER EDGE OF WINDOW. - Give all fabric surfaces below the lower edge of the window, in the cockpit, one coat of clear dope, conforming to Specification No. AN-TT-D-514, and one coat of aluminum dope. This dope is made by mixing clear dope, conforming to Specification No. AN-TT-D-551, and aluminum powder, conforming to Federal Specification No. TT-A-468.

c. FINISH COAT.

(1) EXTERIOR SURFACES. - Finish all fabric surfaces on the outside of the glider with at least one coat of pigmented dope, conforming to Specification No. AN-TT-D-554, the color depending upon the color scheme.

(2) INTERIOR SURFACES.

(a) INSIDE OF COCKPIT.

1. ABOVE LOWER EDGE OF WINDOW. - Finish all fabric surfaces inside the cockpit, with one coat of aluminum dope, made by mixing clear dope, conforming to Specification No. AN-TT-D-551, with aluminum powder, conforming to Federal Specification No. TT-A-468.

2. BELOW LOWER EDGE OF WINDOW. - Finish all fabric surfaces inside the cockpit, below the lower edge of the window, with one coat of pigmented dope, conforming to Specification No. AN-TT-D-554. The color of this dope depends on the color scheme used.

Commercial products, such as control cables, control pulleys, turnbuckles, etc., do not require any extra finish, and should be covered with masking tape in order to keep them from becoming coated while finishing other surfaces.

ALPHABETICAL INDEX

A

Aileron
Description 8
Dimensions 1
Aileron control diagram 12
Aileron hinge lubrication diagram 6
Aileron torque tube 8
Airfoil 1

B

Bell crank, aileron 14
Brake 14
Brake controls diagram 15

C

Communicating equipment 14
Control column lubrication diagram 7
Control system 14
Control column 10

D

Description 1
Dihedral 1
Dimensions 1

E

Elevator
Description 14
Dimensions 1
Elevator and rudder lubrication diagram 6
Elevator controls diagram 11
Empennage 8
Empennage 9
Erection procedure 3
Exterior surfaces (finish) 17

F

Finish specifications 17
Fuselage 14
Fuselage 9
Fuselage inspection holes 5
Fuselage stations diagram 10
Fuselage wing connection 3

G

Glider assembly 3

H

Handling 4
Hoisting 4
Hoisting diagram 4
Horizontal stabilizer attachment points on fuselage 4

I

Incidence
Inside cockpit (finish) 18
Interior surfaces (finish) 17
Inspection
Periodic 5
Preflight 5

L

Landing gear
Description 8
Dimension 2
Leveling
Longitudinally 4
Transversely 4
Lubrication 6

M

Metal surfaces (finish) 17
Mooring 4

P

Pedals, rudder 14
Primary coat, (finish) 17
Primary, structure 14

R

Release 14
Release controls diagram 14
Release hook 5
Release hook 15
Ribs, elevator 14
Ribs, horizontal stabilizer 8
Ribs, rudder 14
Ribs, wing 8
Rudder
Description 14
Dimensions 2
Rudder controls diagram 11

S

Shipment 3
Spar, elevator 14
Spar, horizontal stabilizer 8
Spar, rudder 14
Spar, vertical stabilizer 8
Spar, wing 8
Spoiler
Description 8
Dimensions 1
Spoiler controls diagram 13
Stabilizer, horizontal
Description 8
Dimensions 1

Stabilizer, vertical
Description 8
Dimensions 2

T

Three-quarter front view of TG-1A glider. II
Thru-view drawing of TG-1A glider 2
Tire pressure 2
Trailer for TG-1A glider. 3
Towing 5

W

Weight and balance diagram 16
Wing
Description 8
Dimensions 1
Wing butt fittings 3
Wing stations diagram 8
Wing inspection holes 5
Wood surfaces, (finish) 17

APPENDIX I

U.S.A. - BRITISH GLOSSARY OF NOMENCLATURE

U.S.A.	BRITISH
Airfoil	Aerofoil
Angle of incidence	Angle of wing setting
Controls, flight	Flying controls
Empennage	Tail unit
Landing gear	Alighting gear, under-carriage or chassis
Glider	Primary glider
Line, mooring	Mooring guy
Load, useful	Disposable load
Radio	Wireless
Rings, mooring, or mooring lugs	Picketing rings
Sailplane, soaring plane, or performance-type glider	Sailplane, high-performance sailplane, or intermediary sailplane
Stabilizer, horizontal	Tail plane
Stabilizer, vertical	Fin
Tire	Tyre or tire
Weight empty, or dead load	Tare weight
Weight, gross, or full load	All-up weight
Wing	Main plane